

OKLAHOMA Water News

3rd Quarter 2014

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35th Annual Water Conference to Feature Patricia Mulroy

The 35th Annual Oklahoma Governor's Water Conference and Research Symposium will be held at the Cox Convention Center in downtown Oklahoma City on October 22-23. Pat Mulroy will help open the conference with her keynote, "The Las Vegas Story: Adapting to a New Normal."

As general manager of the Southern Nevada Water Authority (SNWA) from 1993 until retiring in February 2014, and as general manager of the Las Vegas Valley Water District from 1989 until retirement, Mulroy was responsible for acquiring, treating, and delivering water to Southern Nevada. Mulroy was a principal architect of the Authority, which allowed Southern Nevada not only to weather the stresses of growth, but also to thrive during one of the worst droughts of record in the Colorado River basin.



Pat Mulroy, keynote speaker for the 2014 Oklahoma Governor's Water Conference

Lieutenant Governor Todd Lamb will help kick off the two-day conference, while Governor Mary Fallin will welcome attendees and provide the keynote address on the morning of Day 2.

Other Conference highlights include expert panels on the following topics: Regional and Local Planning for Future Droughts, Water Reuse Issues, Oklahomans Solving Global Water Crises, Federal Updates, and Water Fuels Oklahoma's Economy. Oklahoma Water Pioneer awards will be presented at the luncheon on October 22, followed by updates from Congressmen James Lankford, Frank Lucas, and Markwayne Mullin.

A roundtable discussion on water rights administration in Oklahoma will be held at 1:30 p.m. on October 23, featuring experts in Oklahoma water law debating the pros and cons of the state's current system.

(continued on page 2)

From the Director

Summer is winding down, and it's probably been one of the mildest that I can remember in a long time. With the the milder temps and most welcome moisture through most of June and July, many Oklahomans may have forgotten that there are still large swaths of western Oklahoma facing the crippling effects of four years of drought.

Fortunately, Governor Fallin's recent announcement of the Water for 2060 Drought Grant Program is welcome news. Through the grant program, we will have \$1.5 million available for cities, counties, water districts, and other public entities to help fund drought relief projects that highlight responsible use of water. Those interested should apply for grants prior to

(continued on page 2)

35th Annual
**Oklahoma Governor's
Water Conference &
Research Symposium**

6
5
4
3
2
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October 22-23, 2014
Cox Convention Center
Oklahoma City

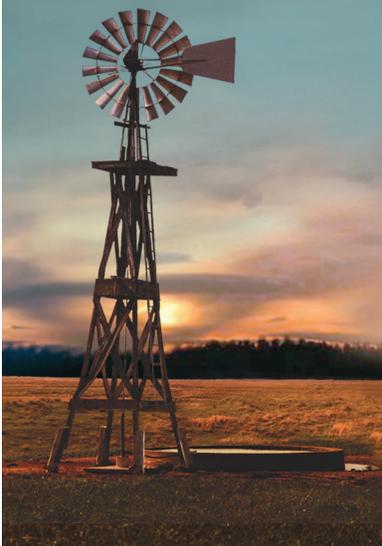
**EVERY
DROP
COUNTS**

EFFICIENCY • CONSERVATION
RECYCLING • REUSE

Hosted by the Oklahoma Water Resources Board
and Oklahoma Water Resources Center.



J. D. Strong, Executive Director
Oklahoma Water Resources Board



35th Annual Conference (continued)

The OWRB's regular monthly meeting will be held at the Cox Convention Center at 3:30 on October 23 following Water Conference adjournment.

The Conference will once again be held in conjunction with the Water Research Symposium, hosted by the Oklahoma Water Resources Center. The Symposium agenda includes six sessions on current water-related scientific research and developments in Oklahoma.

For the latest agenda, online registration, and hotel information, visit owrb.ok.gov/GWC. ♦

From the Director (continued)

the November 26, 2014 deadline. With the grant program announcement, the Water for 2060 Advisory Council's work throughout the summer, the OWRB and Bureau of Reclamation's Drought Challenge event in September, several water-related interim studies at the State Legislature, and planning for the 35th annual Governor's Water Conference in October, it remains an exciting and busy time at the Water Board.

This summer the Water for 2060 Advisory Council continued work with its fourth meeting on August 19th. The meeting focused on water conservation practices and technology for industrial water use—specifically related to electrical power generation, oil and gas production, and other related industries. In addition to the meeting, several members of the Advisory Council joined the Oklahoma Panhandle Agriculture and Irrigation Association, the City of Guymon, and many other Panhandle stakeholders for a field tour in early August of various water conservation initiatives in the region. The Council will meet again on November 18th to begin finalizing recommendations to the Governor and Legislature on how Oklahoma can achieve its ambitious goal of consuming no more freshwater in 2060 than was consumed in 2010.

If the theme in August was largely related to the Water for 2060 Advisory Council, then drought was the focus for a number of events in September. On September 16, the OWRB and the Bureau of Reclamation teamed up to present Oklahoma's first-ever Drought Challenge at the National Weather Center in Norman. The Drought Challenge was an exciting new approach to promoting drought mitigation and planning. By using a competition format and a fictional water basin as the backdrop, the Drought Challenge aimed to encourage collaboration among water planners and users from various backgrounds and different parts of the state.

The Drought Challenge preceded a two-day Drought Forum hosted by the Western Governors' Association (WGA), Governor Mary Fallin, and the Office of the Secretary of Energy and Environment. Oklahoma kicked off the first of five planned WGA Drought Forum meetings by hosting "Managing Drought in the Energy Sector" at the National Weather Center on September 18-19. Nevada Governor Brian Sandoval, WGA's current Chairman, created the Drought

Forum series as part of the WGA Chairman's Initiative to foster a regional dialogue in which states and industry can share best practices on drought policy, preparedness, and management.

The Drought Challenge and the WGA Drought Forum weren't the only recent events to take a detailed look at water-related issues. The leadership of both the State House and Senate approved several water-focused interim studies for the late summer and fall. These interim studies are important forums during the legislative "offseason" for providing our state's elected officials with the opportunity to investigate a multitude of important issues facing water planning and water use throughout Oklahoma.

So far, I've had the honor of presenting at State Representative Steve Vaughn's interim study on groundwater use related to energy production in Oklahoma. In October, there will be additional interim studies that either focus on water solely, or that feature water-related topics on their periphery. For example, at an upcoming interim study to be lead by State Representatives Mark McBride and Jon Echols in October, I will provide attendees with an update on all that has been accomplished, as well as all that remains to be completed, since the 2012 Update of the Comprehensive Water Plan was completed. I look forward to providing the panel with several remaining legislative opportunities that are included in the OCWP's list of Priority and Supporting Recommendations.

Last, but never least, it's the time of year when we are fast approaching the 35th Annual Governor's Water Conference and Research Symposium. The theme for this year's conference is "Every Drop Counts." For a complete picture of this year's water conference, which will be held October 22-23 at the Cox Convention Center in downtown Oklahoma City, please check the OWRB's conference page regularly for updates. As always, we have a great lineup of speakers, presentations, and forums this year, including a keynote address from Patricia Mulroy, principal architect and former general manager of the Southern Nevada Water Authority. Governor Mary Fallin; Congressmen James Lankford, Frank Lucas, and Markwayne Mullin; EPA Deputy Regional Administrator Sam Coleman; and a number of other regional and national figures are also scheduled to discuss a wide-range of water-related topics.

To register, visit our website at www.owrb.ok.gov/GWC or call us at 405-530-8800. Please take note that our next Board meeting has been moved to coincide with that event following adjournment on the conference's last day. ♦

The October regular monthly meeting of the Oklahoma Water Resources Board will be held at 3:30 p.m. on October 23 at the Cox Convention Center, 1 Myriad Gardens, Oklahoma City, Oklahoma 73102.

Moore Celebrates Opening of New Wastewater Treatment Plant

State water planning officials and local officials from Moore gathered on September 16 to celebrate the opening of the community's new and improved wastewater treatment plant. The new plant doubles the community's treatment capacity and addresses several necessary infrastructure improvements.

Situated within a heavily developed residential and industrial area, the treatment project presented some unique challenges for planners: the new wastewater facility had to be constructed directly on top of the old one. Old portions of the plant were dismantled while new ones were erected, all while keeping Moore's existing systems operational.

Several new challenges were introduced as a result of the tragic tornado in May 2013. However, planners and state officials never wavered in their commitment to completing the project.

Many improvements included in the new plant are aimed at increasing both the capacity and effectiveness of wastewater treatment. Specifically, the new ultraviolet light disinfection system and other facilities have increased capacity from 4.5 million gallons per day (mgd) to 9 mgd. With the current technologies in place, the new facility could one day increase capacity of treatment up to 24 mgd. In addition to increased capacity, initial tests have demonstrated that the new plant is able to disinfect much more efficiently as well.

Perhaps the most noticeable improvement to the citizens living and working in the area, and motorists that frequently use I-35 or other area roads, is the elimination of odors around the facility. The new treatment plant contains state-of-the-art technology that helps detect and eliminate any odor issues that result from the plant's operations.

The project was made possible by a total of \$53,417,982 in loans through the OWRB's Financial Assistance Division. 💧



Moore Mayor Glenn Lewis cuts the ribbon at the city's new state-of-the-art wastewater treatment facility, assisted by (left to right) Satish Dasharathy, consulting engineer; Rudy Herrmann, OWRB Chairman; J.D. Strong, OWRB Executive Director; Steve Eddy, Moore City Manager; Joe Freeman, OWRB; Sachin Mukerjee, consulting engineer; Jimmy Givens, ODEQ Deputy Executive Director; Mark Hamm, Ward 2 Council Member; and Robert Pistole, Plant Manager.

Water for 2060 Advisory Council Tours Panhandle

As part of Oklahoma's ongoing Water for 2060 initiative, several state and local officials and water planning specialists recently joined agricultural producers, industrial enterprises, and municipal officials from the Panhandle region for a review of water conservation practices and a tour of water reuse opportunities.

The tour focused specifically on the Water for 2060 Advisory Council's review of current water conservation and reuse practices, in addition to cutting edge irrigation practices at several Panhandle agricultural operations, including Fischer Farms, and livestock operations at Hitch Feeders.

The tour also included a visit to the City of Guymon's wastewater treatment facility and High Plains Bioenergy's biodiesel refinery near Guymon, both of which included discussions regarding prospective water reuse projects. 💧



Oklahoma Water for 2060 Advisory Council and other partnering organizations tour Oklahoma's Panhandle region August 7 to review water conservation and reuse efforts by irrigators and municipalities.

Wetland Water Quality Standards Under Development

The OWRB is currently sharing information and seeking stakeholder input at public meetings for the development of Oklahoma's first wetland water quality standards.

Although Oklahoma's wetlands are considered "waters of the state" and are currently protected with default water quality standards, these standards were developed for lakes and streams and are often not suitable for wetlands, leading both to scientific and regulatory challenges. New water quality standards for wetlands would provide a scientifically sound foundation for Oklahoma's wetland programs, as well as regulatory relief from overly stringent standards that were not developed to protect the unique characteristics of wetlands.

Additional information, including Work Group meeting notices and a schedule for the 2014-15 standards revision process, is available at www.owrb.ok.gov/standards. 💧

Gov. Fallin Announces Drought Grants for Projects Highlighting Responsible Water Use

Governor Mary Fallin announced in September that the state of Oklahoma has \$1.5 million available in drought grants to help fund projects highlighting responsible use of water.

Eligibility requirements must be met to receive funding from the Water for 2060 Drought Grant Program. Eligible entities include counties, towns and municipalities, public works authorities, and rural water/sewer districts. Grants are capped at \$500,000. The deadline for application this year is November 26, 2014.

Projects to be considered must demonstrate water efficiency and support drought resiliency within the community or water/wastewater system. Water efficiency is defined as the use of improved technologies and practices to deliver equal or better services with less water. Water efficiency encompasses responsible water use and water reuse efforts, as well as water loss reduction and prevention to protect water resources for the future.

Eligible categories of water efficiency projects include the following:

- Installing or retrofitting water efficient devices in public buildings, such as plumbing fixtures and appliances.
- Installing any type of water meter in previously unmetered areas.
- Leak detection and associated replacement of leaks within the distribution system.
- Replacing existing broken/malfunctioning water meters, or upgrading existing meters, with automatic meter reading systems.
- Retrofitting/adding automatic meter reading capabilities or leak detection equipment to existing meters.
- Water audit and water conservation plans, which are reasonably expected to result in a capital project.
- Recycling and water reuse projects that replace potable sources with non-potable sources, including gray water, condensate and wastewater effluent reuse systems (where local codes allow the practice) and extra treatment costs and distribution pipes associated with water reuse.
- Retrofitting or replacing existing public landscape irrigation systems with more efficient landscape irrigation systems, including moisture and rain-sensing equipment.
- Retrofitting or replacing existing public irrigation systems with more efficient irrigation systems.

With passage of the Water for 2060 Act in 2012, Oklahoma became the first state to establish a statewide goal of consuming no more fresh water in 2060 than is consumed today. Appointees to the Water for 2060 Advisory Council are studying a wide range of innovative conservation measures, incentives, and related project financing options to solidify Oklahoma's water future.

"Governor Fallin has shown unwavering leadership when it comes to stewardship of Oklahoma's invaluable water resources," said J. D. Strong, OWRB Executive Director. "From signing the Water for 2060 Act into law to helping us provide this opportunity to encourage more widespread adoption of water efficiency measures, it helps our water conservation campaign immensely to have the state's chief executive on board."

For more information, go to www.owrb.ok.gov/2060 and click on "Water for 2060 Drought Grants." 💧



OWRB and Bureau of Reclamation Host Drought Challenge

Oklahoma's inaugural Drought Challenge was held on September 17 at the National Weather Center in Norman. Hosted by the OWRB and Bureau of Reclamation, the event offered an exciting new approach to promoting comprehensive drought mitigation, preparedness, and planning. Collaboration was encouraged among water planners and other stakeholders, and participants were educated on the multidisciplinary and multi-sector implications of drought.

During the event, teams with representatives from agriculture, tourism and recreation, public water supply, energy, environment, and industry sectors were given water shortage scenarios for a fictitious watershed. Team members worked together to develop solutions to meet the challenges.

The winning team, "Up the Creek," included the following members: Bud Ground, PSO; Ken Komiske, City of Norman; Fred Fischer, OK Panhandle Agriculture & Irrigation Association; Shelly Morgan, Lake Texoma Association; Amber Zimmerman, Washita National Wildlife Refuge (Foss); and Daniel Fenner, US Fish & Wildlife Service. 💧



Teams participate in Oklahoma's inaugural Drought Challenge at the National Weather Center in Norman.

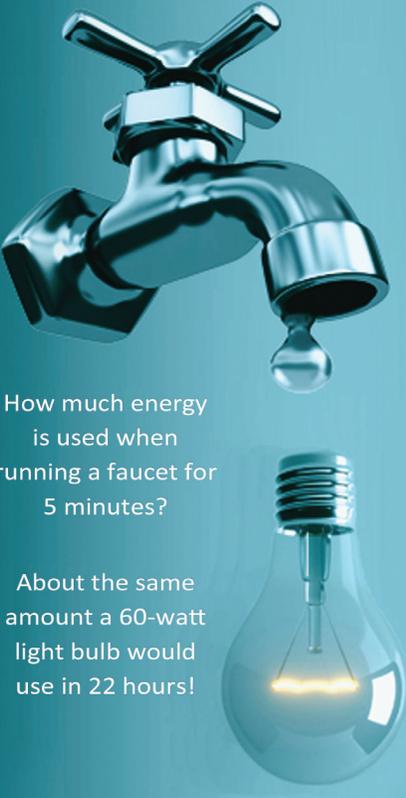
What is Water Efficiency?

Water efficiency is one of the core components of Oklahoma's Water for 2060 initiative to consume no more fresh water in 2060 than is consumed today. The term "water efficiency" refers to the practice of using less water to provide the same results. Water efficiency can be achieved by reducing waste through the smart use of water-saving techniques and technologies.

Save Water, Save Energy

It takes a considerable amount of energy to deliver and treat the water you use every day. For example, letting your faucet run for five minutes uses about as much energy as letting a 60-watt light bulb run for 22 hours!

5 min. = 22 hrs.



How much energy is used when running a faucet for 5 minutes?

About the same amount a 60-watt light bulb would use in 22 hours!

WATER FOR 2060
EFFICIENCY • CONSERVATION • RECYCLING • REUSE

Save Water, Save Money

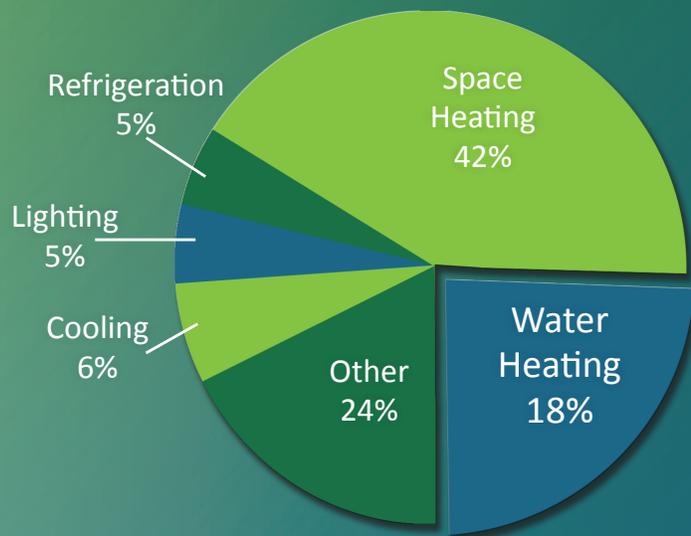
The average family spends \$1,100 per year in water costs, but can save \$350 from retrofitting with WaterSense labeled fixtures. Products bearing the WaterSense label have been independently certified to perform well; help save water, energy, and money; and encourage innovation in manufacturing. Also, when we use water more efficiently, we reduce the need for costly investments in water treatment and delivery systems.



Heating water for bathing, shaving, cooking, and cleaning also requires a lot of energy. Homes with electric water heaters, for example, spend one-quarter of their electric bill just to heat water.

According to the US Department of Energy, water heating is the second largest energy expense in your home. It typically accounts for about 18% of your utility bill after heating and cooling.

Household Energy Use



<http://energy.gov/energysaver/articles/tips-your-homes-energy-use>

Look for ways to heat your water more efficiently and use less.

Activity	Gallons per Use
Clothes Washer	25
Shower	10
Automatic dishwasher	6
Kitchen faucet flow	2 per min
Bathroom faucet flow	2 per min
Total daily average	64

There are four ways to cut your water heating bills: use less hot water, turn down the thermostat on your water heater, insulate your water heater, or buy a new, more efficient model, such as an ENERGY STAR qualified traditional water heater or whole-home tankless heater.

For more information, visit www.owrb.ok.gov/2060.

Garber-Wellington Presentation Preps Board for Upcoming Tentative Determination

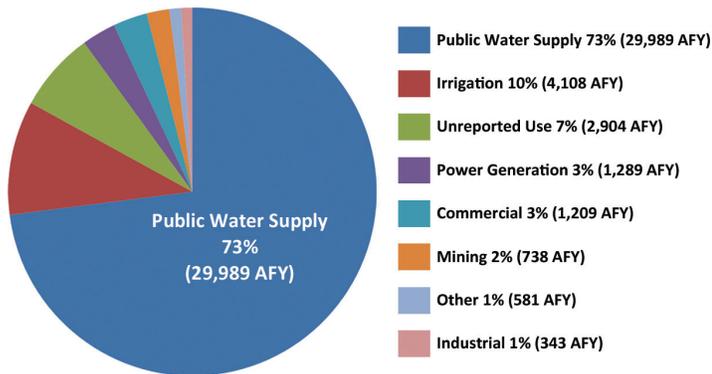
During the August Board meeting, Oklahoma Water Resources Board (OWRB) members were given a presentation on pertinent results of the Garber-Wellington Aquifer Management Study, which began in late 2008 and concluded in 2014.

Chris Neel, OWRB Geologist and study coordinator, provided the Board with details about the geology of the aquifer, current permitted and domestic use, and recharge rates. Together, these factors are important components for ascertaining the tentative and final determination of the aquifer's maximum annual yield (MAY) and subsequent setting of the equal proportionate share (EPS), which will ultimately govern the amount of water that can be permitted to each landowner in the basin.

According to Neel, the geology of the aquifer is extremely diverse, consisting of fine-grained sandstone interbedded with siltstone and shale. Depth to water varies from less than 200 to 350 feet; saturated thickness ranges from 200 to 1,000 feet. Non-domestic wells completed in the aquifer can yield as much as 600 gpm but generally yield from 200 to 400 gpm.

From 1995 to 2008, 73% of the aquifer's permitted use was for public water supply. The largest users included the cities of Edmond, Moore, Norman, Bethany, Yukon, Nichols Hills, Mustang, and Purcell, along with Tinker Air Force Base, and Oklahoma Gas and Electric Company. There is also a significant amount of domestic use of the aquifer, accounting for an estimated total of 15,000 to 20,000 acre-feet per year (AFY).

Average Groundwater Use by Type Garber-Wellington Aquifer (1995-2008)



As part of the study, a digital groundwater-flow model was created by the USGS to determine the amount of water in storage and other important parameters. The model takes into consideration the rate of natural recharge, total discharge, and aquifer transmissivity. While providing general information about the aquifer's storage, the model can also pinpoint areas of localized drawdown.

Maximum Annual Yield FACT SHEET

OWRB
the water agency

Hydrologic Investigation

Tentative Determination

Public Hearing(s)

Final Order (Final Determination)

Equal Proportionate Share

When maximum annual yield has been determined, the OWRB is required by law to distribute the maximum annual yield equally across the basin or subbasin. "Equal proportionate part or share" is defined as the maximum annual yield of water from a groundwater basin or subbasin that is allocated for each acre of land within the basin or subbasin. In other words, it is the portion of the maximum annual yield that must be allocated to each acre of land within the basin or subbasin that is entitled to be allocated for a regular permit.

Each groundwater user is entitled to withdraw an equal share of water proportionate to the amount of land owned.

Consistent with state law, the OWRB conducts maximum annual yield (MAY) studies to determine amounts of water that may be withdrawn from Oklahoma's groundwater basins by permitted water users. For more information, go to www.owrb.ok.gov and click on "Groundwater Studies." This page has information on the Garber-Wellington and other current studies and a fact sheet on MAY.

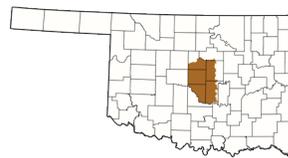
The MAY determination process includes the following steps: Hydrologic Investigation, Tentative Determination, Public Hearing(s), and Final Order. With completion of the Hydrologic Investigation phase for the Garber-Wellington Aquifer, the next step will be Tentative Determination.

Maximum Annual Yield Determination Process

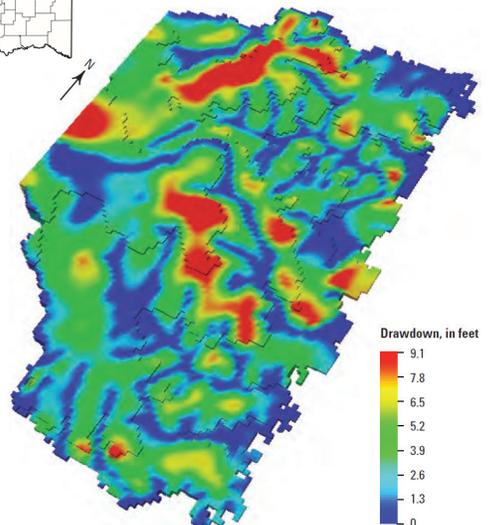


Development of the digital groundwater-flow model helps facilitate the testing of various scenarios developed by OWRB staff. These scenarios typically assume 100% development of the aquifer and interpret "life of the basin" under various pumping rates, which ultimately will help the OWRB determine an appropriate MAY and rates of withdrawal.

For more information, including the complete study report published by the USGS, visit www.owrb.ok.gov and click on "groundwater studies."

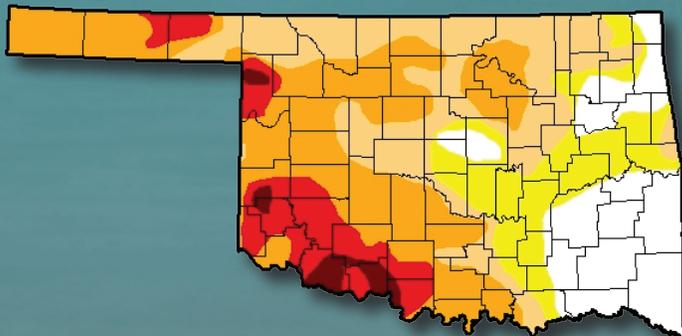


Drawdown in the Garber-Wellington numerical model after 50 years of pumping at 2009 rates.



Drought Update

U.S. Drought Monitor
September 16, 2014

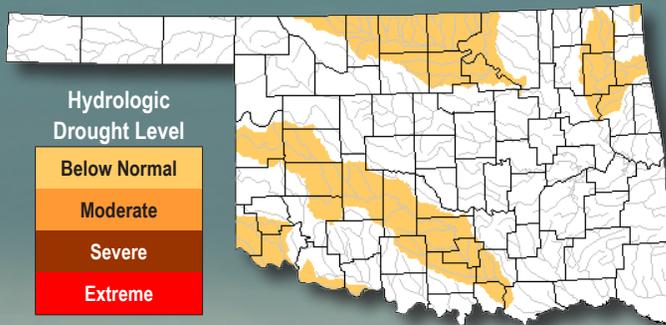
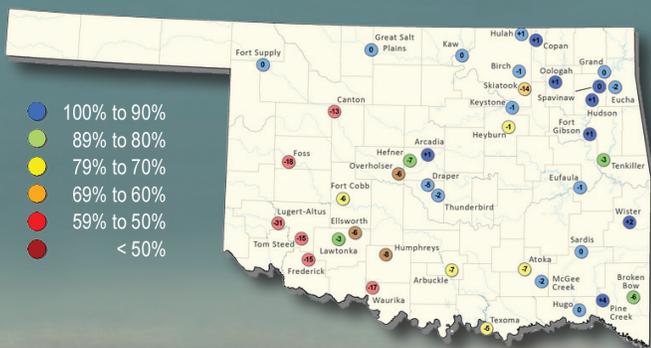


Drought Intensity & Percent of State in Drought Category

Abnormally Dry	95.95
Moderate Drought	77.48
Severe Drought	50.67
Extreme Drought	24.03
Exceptional Drought	8.61

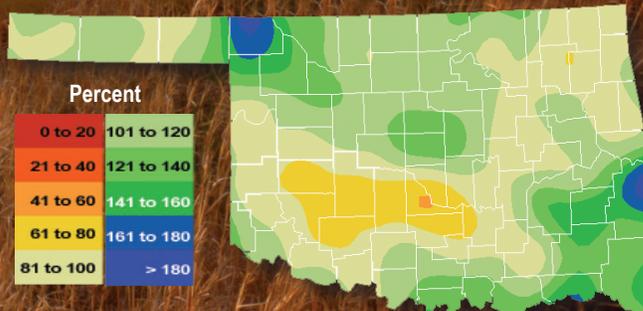
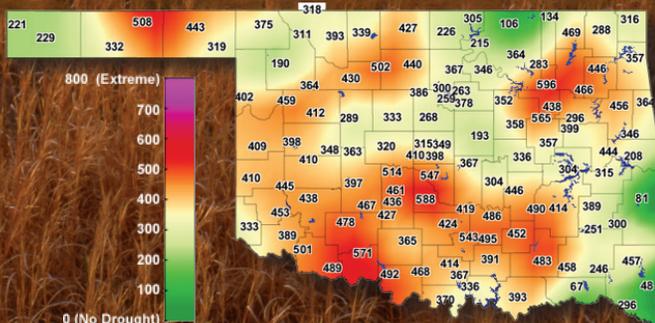
Reservoir Storage
September 16, 2014

Streamflow (7-Day Average)
September 17, 2014



Keetch-Byram Drought Index
September 18, 2014

Percent of Normal Precipitation
Last 90 Days (June 20 to September 17, 2014)



Data obtained from the National Drought Mitigation Center, U.S. Geological Survey, U.S. Army Corps of Engineers and Oklahoma Climatological Survey. For more drought information, and to obtain updated information on Oklahoma's drought and moisture conditions, go to www.owrb.ok.gov/drought.

www.owrb.ok.gov

*Rudy Herrmann, Chairman • Linda Lambert, Vice Chairman • Tom Buchanan, Secretary
Bob Drake • Ford Drummond • Marilyn Feaver • Ed Fite • Jason Hitch • Richard Sevenoaks*

Protecting and enhancing the quality of life for Oklahomans by managing and improving the state's water resources to ensure clean and reliable water supplies, a strong economy, and a safe and healthy environment.



3rd Quarter 2014

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FINANCIAL ASSISTANCE PROGRAM UPDATE

Loans & Grants Approved as of September 16, 2014

FAP Loans—364 for \$932,425,000

The OWRB's Financial Assistance Program (FAP), created by the State Legislature in 1979, provides loans for water and wastewater system improvements in Oklahoma. The tremendous popularity of the bond loan program is due, in part, to extended payoff periods of up to 30 years at very competitive interest rates, averaging approximately 4.762 percent since 1986.

CWSRF Loans—283 for \$1,289,784,409

The Clean Water State Revolving Fund (CWSRF) loan program was created in 1988 to provide a renewable financing source for communities to use for their wastewater infrastructure needs. The CWSRF program is Oklahoma's largest self-supporting wastewater financing effort, providing low-interest loans to communities in need.

DWSRF Loans—170 for \$875,520,300

The Drinking Water State Revolving Fund (DWSRF) loan program is an initiative of the OWRB and Oklahoma Department of Environmental Quality to assist municipalities and rural water districts in the construction and improvement of drinking water systems. These projects are often mandated for communities to obtain compliance with increasingly stringent federal standards related to the treatment of drinking water.

REAP Grants—618 for \$54,805,938

The Rural Economic Action Plan (REAP) Program was created by the State Legislature in 1996. REAP grants, used for water/wastewater system improvements, target primarily rural communities with populations of 7,000 or less, but priority is afforded to those with fewer than 1,750 inhabitants.

Emergency Grants—568 for \$33,822,821

Emergency grants, limited to \$100,000, are awarded to correct situations constituting a threat to life, health, or property and are an indispensable component of the agency's financial assistance strategy.

Drought Response Program Grants—10 totaling \$1,543,848

Through the OWRB's Drought Response Program, funding is available for communities in most dire need during state drought emergencies declared by the Governor. A maximum of \$300,000 is diverted from existing OWRB Emergency Grant funds to establish the Program.

**Total Loans/Grants Approved: 2,013 for \$3,187,902,316
Estimated Savings: \$1,091,629,605**

Applicants eligible for water/wastewater project financial assistance vary according to the specific program's purpose and requirements, but include towns and other municipalities with proper legal authority, various districts established under Title 82 of Oklahoma Statutes (rural water, master/water conservancy, rural sewage, and irrigation districts), counties, public works authorities, and/or school districts. Applications for agency financial assistance programs are evaluated individually by agency staff. Those meeting specific program requirements are recommended by staff for approval at monthly meetings of the nine-member Water Board.

**For more information, call 405-530-8800
or go to www.owrb.ok.gov/financing.**